

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : **10/014,179**  
Applicant : **DIMITROVA et al.**  
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Examiner : **BAIG, Sahar A.**  
Atty. Docket : **US010588US**  
Title: **AFFECTIVE TELEVISION MONITORING AND CONTROL**

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Commissioner for Patents  
Alexandria, VA 22313-1450

**REPLY BRIEF UNDER 37 CFR 41.41**

Sir:

This is a Reply Brief in response to the Examiner's answer dated 18 June 2010 in the subject application.

**RESTATEMENT OF GROUNDS OF REJECTION**

Claims 1, 3-8<sup>1</sup>, 10-30, 34<sup>2</sup>, 36, and 39-40 stand rejected under 35 U.S.C. 103(a) over Zawilinski (USP 5,676,138) in view of Hoffberg et al. (USP 6,400,996, hereinafter Hoffberg) and Strubbe (USP 5,483,278).

Claims 31-32 stand rejected under 35 U.S.C. 103(a) over Zawilinski in view of Hoffberg, Strubbe, and Black et al. (USP 5,774,591, hereinafter Black).

Claims 33 and 38 stand rejected under 35 U.S.C. 103(a) over Zawilinski in view of Hoffberg, Strubbe, and Bentolila et al. (USPA 2003/0101449, hereinafter Bentolila).

Claim 37 stands rejected under 35 U.S.C. 103(a) over Zawilinski in view of Hoffberg, Strubbe, and Shinohara (USPA 2003/0005431).

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<sup>1</sup> The Office action and the Examiner's Answer state that claims 1-8 are rejected; however, claim 2 has been canceled.

<sup>2</sup> The Office action and the Examiner's Answer omit claim 34 in the statement of rejection. The applicants believe that this is a typographical error because the Examiner subsequently references claim 34 as being "encompassed within the rejection of Claim 1".

REMARKS REGARDING EXAMINER'S ANSWER

**Claims 1, 3-8, 10-34, 36-40**

The Examiner asserts that Zawilinski discloses ***descriptive information related to the stimuli*** that produces a user reaction at column 5, lines 35-65. This assertion is incorrect.

At the cited text, Zawilinski discloses:

"field of research regarding emotional responses of human beings, more particularly, a system including measurement devices of physiological variables operably connected to a computerized analyzer and having a multimedia display for displaying resulting data, such as each of a plurality of semantic descriptors associated with each of a plurality of emotional responses of a human at a given moment over a preselected time period during the presentation of a stimulus.

As a matter of background, the present invention operates on two theories of emotion, each of which are based on the premise that one or more physiological responses, such as electrical muscle activity, precede the identification of an emotional response in reaction by an individual to a stimulus.

The present invention comprises (1) a stimulus presentation device for presenting a stimulus occurring over a predetermined period of time to each of one or more individuals forming a population sample, measuring devices to measure a change in each of a plurality of physiological variables, (2) translation or processing means, namely a software program installed on a computerized processing means, to translate each value of a physiological variable for each individual into a common unitless measure of emotional response at any one preselected unit of time over a preselected period of time and to apply automatically a semantic descriptor to each common unitless measure of emotional response falling on a sector of an interaction index, and (3) an interactive multimedia computer for electronically storing, displaying and retrieving information and capable of at least visually displaying at least one stimulus"

As is clearly evident, nowhere in the cited text does Zawilinski address ***descriptive information*** that is ***related to the stimuli*** that produces the user's reaction, and in particular, nowhere in the cited text does Zawilinski disclose a processor for receiving and analyzing a signal representative of the physical reaction of a viewer to determine if it can be associated with at least one recognizable viewer emotional response, whereupon the processor ***associates the recognized emotional response with a descriptive information relating to a program*** that was being displayed when the physical reaction was sensed, to provide a viewer preference relating to the ***descriptive information***, as specifically claimed in claim 1, upon

which claims 3-8, 10, and 40 depend. The Examiner relies on the rejection of claim 1 to support the rejection of claims 11-30, 34, 36, and 39 (Examiner's Answer, page 17, paragraph b). The Examiner also relies on the rejection of claim 11 to support the rejection of claims 31-33 and 37-38 (Examiner's Answer, pages 19 and 20, paragraphs g through i.)

Zawilinski discloses determining a semantic descriptor corresponding to an emotional response of a viewer to an advertisement. The Examiner apparently considers the fact that this semantic descriptor is used to assess the program/advertisement being viewed corresponds to the claimed descriptive information relating to the program being viewed. This interpretation is inconsistent with the applicants' claim.

The applicants' claim 1 includes a two-step process. In a first step, the physical reaction of a viewer is analyzed to determine a recognized emotional response. Then, in a second step, this recognized emotional response is associated with descriptive information relating to a program. For example, based on the viewer's physical reaction, the program may determine that the viewer is exhibiting laughter. Then, in a second step, the program may associate laughter with descriptive information related to the program, such as the actor, the director, the title, the genre, and so on. In this way, for example, the program can determine that a particular actor generally evokes laughter from the viewer. Zawilski does not perform this second step; Zawilski is silent with respect to descriptive information related to the stimuli that evoked the monitored response.

The applicants respectfully maintain that Zawilinski's semantic descriptor corresponds to the applicants' claimed recognized emotional response (e.g. laughter). The applicants note that the Examiner's analysis of claim 1 supports this correspondence. The Examiner states that Zawilinski discloses analyzing the physical reaction of a viewer to determine an associated recognized emotional response at column 4, lines 47-57. At the cited text, Zawilinski discloses:

"Accordingly, it is a principal object of the invention to provide a means by which to detect a human emotional response at a moment in time in response to stimulus presented at that moment in time.

It is another object of the invention to provide means by which an emotional response can be detected by directly measuring an associated physiological variable.

It is a further object of the invention to provide means by which an emotional response can be semantically described automatically upon detection." (Zawilinski, column 4, lines 47-57).

Given that the Examiner cites Zawilinski's determination of a semantic description to read upon the applicants' determination of a recognizable viewer emotional response, the applicants respectfully maintain that the Examiner's subsequent assertion that this **same** determination of the semantic description corresponds to a determination that associates the semantic description with **descriptive information relating to a program** is unfounded and/or contradictory.

The Examiner's redundant use of Zawilinski's determination of a semantic descriptor as corresponding to each of the two-step process claimed by the applicants distorts the meaning of the applicants' claimed invention. If the descriptive information relating to a program is considered to be this same semantic description, then the second step of the applicants' claim would be interpreted to correspond to: "whereupon the processor associates the [semantic descriptor of the user reaction] with a [semantic descriptor of the user reaction] relating to a program that was being displayed when the physical reaction was sensed", which obviously renders this second limitation meaningless.

Additionally, claim 1 recites that the association of the recognized emotional response with descriptive information relating to a program is performed to provide a **viewer preference relating to the descriptive information**. If Zawilinski's semantic descriptor of the user's reaction (happy, sad, content, agitated, etc.) is interpreted to correspond to the descriptive information relating to a program, and descriptive information of the program (comedy, drama, news, includes John Wayne, etc.) is not provided, such a determination of the users preference with regard to the descriptive information related to the program can not be made.

The Examiner's equating of Zawilinski's semantic descriptor to both the determined emotional response and the descriptive information would result in the determined viewer preference being something like "the user is {happy, sad, content, agitated, etc.} when the program makes the user {happy, sad, content, agitated, etc.}". Without an emotional response [semantic descriptor] being distinguished from the descriptive information related to the program, the Examiner's interpretation of Zawilinski renders this further aspect of the applicants' claim meaningless

Contrarily, as noted above, using a reasonable and meaningful interpretation of the applicants' claim in the context of the application, wherein the emotional response {happy, sad, content, agitated, etc.} is distinguished from the descriptive information {comedy, drama, news, includes John Wayne, etc.}, the determined viewer's preference would be something like "the user is {happy, sad, content, agitated, etc.} when the program being viewed is {comedy, drama, news, includes John Wayne, etc.}", because such an association provides a meaningful and useful determination of the user's preference for the descriptive information related to the program, as claimed.

Because Zawilinski fails to teach or suggest associating a recognized emotional response with a descriptive information relating to a program to provide a viewer preference relating to the descriptive information, as specifically claimed by the applicants, the applicants respectfully maintain that the Examiner has failed to establish a prima facie case to support the rejections of claims 1, 3-8, 10-34, and 36-40 under 35 U.S.C. 103(a) that rely on Zawilinski for this teaching. Accordingly, the applicants respectfully request that these rejections be reversed by the Board.

The Examiner also asserts that Hoffberg discloses associating a recognized emotional response or mood with descriptive information relating to a program to identify a user's preference at column 65, lines 33-55. This assertion is also incorrect.

At the cited text, Hoffberg discloses:

"In determining mood, a number of physiologic parameters may be detected. In a training circumstance, these set of parameters are correlated with a temporally associated preference. Thus, when a user inputs a preference into the system as feedback, mood data is also obtained. Invariant preferences may be separated, and analyzed globally, without regard for temporal variations, while varying preferences are linked with information regarding the surrounding circumstances and stored. For example, the preference data may be used to train a neural network, e.g., using backpropagation of errors or other known methods. The inputs to the neural network include available data about surrounding context, such as time, environmental brightness, and persons present; source program choices, which may be raw data, preprocessed data, and abstracted data; explicit user input; and, in this embodiment, mood parameters, which may be physiological or biometric data, voice pattern, or implicit inputs. An example of an implicit input is an observation of a man-machine interaction, such as a video game. The manner in which a person plays a video game or otherwise interacts with a machine may provide valuable data for determining a mood or preference." (Hoffberg, column 65, lines 33-55.)

As is again clearly evident, the cited text does not address ***descriptive information relating to a program***, and in particular does not disclose associating a recognized emotional response or mood with descriptive information relating to a program to identify a user's preference, as asserted by the Examiner.

In Hoffberg, the user's emotion or mood may be determined by the manner in which the person plays a game or interacts with the system, but Hoffberg does not teach or suggest that this determination of emotion or mood will be associated with descriptive information of the game to identify the user's preference relative to this descriptive information, as specifically claimed by the applicants.

Because Hoffberg fails to teach or suggest associating a recognized emotional response or mood with descriptive information relating to a program to identify a user's preference relative to the descriptive information, as specifically claimed by the applicants, the applicants respectfully maintain that the Examiner has failed to establish a prima facie case to support the rejections of claims 1, 3-8, 10-34, and 36-40 under 35 U.S.C. 103(a) that rely on Hoffberg for this teaching. Accordingly, the applicants respectfully request that these rejections be reversed by the Board.

## **Claims 18-22**

The Examiner asserts that Hoffberg discloses determining a distinguishing characteristic of a displayed programming segment and associating a viewer response corresponding to a physical condition perceived during the display of the programming segment with a viewer preference level at column 61, lines 14-30. This assertion is incorrect.

At the cited text, Hoffberg discloses:

"The present invention also allows a dynamic user preference profile determination based on explicit or implicit desires, e.g., moods, which assist in processing data to make decisions which conform to the user preference at a given point in time. For example, voice patterns, skin temperature, heart pulse rate, external context, skin resistance (galvanic skin response), blood pressure, stress, as determined by EMG, EEG or other known methods, spontaneous motor activity or twitching, may be detected in order to determine or infer a user mood, which may be used as a dynamic influence on the user preference. These dynamic influences are preferably stored separately from static influences of the preferences, so that a resultant determined preference includes a dynamic influence based on a determined mood or other temporally varying factor and a static influence associated with the user." (Hoffberg, column 61, lines 14-30.)

As is again clearly evident, the cited text does not address determining characteristics of a displayed program segment, and thus cannot be said to disclose determining a distinguishing characteristic of a displayed programming segment and associating a viewer response corresponding to a physical condition perceived during the display of the programming segment with a viewer preference level, as specifically claimed by the applicants.

Because the Examiner has failed to establish a prima facie case to support the rejection of claims 18-22, the applicants respectfully maintain that the rejection of claims 18-22 under 35 U.S.C. 103(a) over Zawilinski in view of Hoffberg and Strubbe is unfounded, and should be reversed by the Board.

### CONCLUSIONS

Because the combination of Zawilinski, Hoffberg, and Strubbe fails to teach or suggest associating a recognized emotional response with a descriptive information relating to a program that was being displayed when a physical reaction was sensed, to provide a viewer preference relating to the descriptive information, the applicants respectfully request that the Examiner's rejection of claims 1, 3-8, 10-34, and 36-40 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Zawilinski, Hoffberg, and Strubbe fails to teach or suggest determining a distinguishing characteristic of a displayed programming segment and associating a viewer response corresponding to a physical condition perceived during the display of the programming segment with a viewer preference level, the applicants respectfully request that the Examiner's rejection of claims 18-22 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,

/Robert M. McDermott/  
Robert M. McDermott, Esq.  
Registration Number 41,508  
Phone: 804-493-0707  
for: Kevin C. Ecker  
Reg. 43,600  
914-333-9618

**Please direct all correspondence to:**  
Corporate Counsel  
Philips Intellectual Property and Standards  
P.O. Box 3001  
Briarcliff Manor, NY 10510-8001  
Phone: (914) 333-9618  
Fax: (914) 332-0615